

REMARKS**I. STATUS OF THE CLAIMS**

Claims 1-7, 9-16, 23-33, 41-43, and 47-49 are pending and under consideration. Claims 41, 43, and 47 have been amended. No new matter has been added. Applicant acknowledges with appreciation the indication that claims 1-7, 9-16 and 23-33 are allowed.

II. THE OBJECTION OF THE CLAIMS

On page 2 of the Office Action, the Examiner objects to claim 43. Applicant has amended independent claim 43 consistent with the Examiner's suggestion. As such, it is respectfully requested that the Examiner reconsider and withdraw the objection.

III. THE REJECTION OF CLAIMS 41-43 AND 47-49 UNDER 35 U.S.C. §103(a) AS BEING UNPATENTABLE OVER ECMA-267 120mm DVD READ ONLY DISK

Applicant notes that although paragraph 4 of the Office Action indicates that claims 1-7, 9-16 and 23-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over ECMA-267, 120 mm DVD Read-Only Disk (Hereinafter ECMA), Applicant believes the Examiner intended to indicate that claims 41-43 and 47-49 stand rejected under 35 U.S.C. §103(a), since claims 1-7, 9-16 and 23-33 have been indicated as allowed and the rejection addresses only claims 41-43 and 47-49. Accordingly, Applicant will address the rejection of claims 41-43 and 47-49 under 35 U.S.C. §103(a) as being unpatentable over ECMA.

Applicant respectfully traverses this rejection for at least the following reasons.

By way of review, section 17 of ECMA discloses a feedback shift register (Fig. 19) in which bits r_7 to r_0 represent a scrambling byte at each 8-bit shift. At the beginning of the scrambling procedure of a Data Frame, positions r_{14} to r_0 are pre-set to the values specified in table 3. The same pre-set values are used for 16 consecutive Data Frames. Accordingly, although ECMA discloses a data scrambler, the data scrambler disclosed by ECMA is along the lines as the data scrambler of the prior art disclosed by Applicant in Fig. 2 (see Fig. 19 of ECMA and Fig. 2 of present application and Table 3 of ECMA and Fig. 3 of present application). As noted in ECMA and in Fig. 2 of Applicant's prior art (page 2, lines 18-21), the data scrambler includes an exclusive-or (XOR) gate and 15 registers r_0 through r_{14} for supplying random data. That is, ECMA and Fig. 2 of Applicant's prior art teach a random generator having only one logic gate, which is suitable for use in 32 Kb ECC blocks with 2KB for a sector or frame. However, there is no suggestion that the data scrambler of the ECMA should be used with other sizes of ECC blocks in combination with other sizes of sectors or frames, why one skilled in the art

should utilize the data scrambler of the ECMA as the basis for such a scrambler, or why an additional logic circuit should be used in the manner recited in claim 41. Moreover, there is no suggestion that the data scrambler of the ECMA adjusts the generation cycle, why such generation would be in regards to a plurality of tracks, and no evidence as to why one skilled in the art would do so when the parameters are otherwise set in advance by ECMA in regards to DVDs.

In contrast, claim 41 recites, among other features, "a random data generator including ... a first serial logic circuit having a plurality of logic gates, which exclusive-ORs outputs of a first group of the registers and feedbacks the random data to a least significant register, and a second logic circuit which scrambles outputs of a second group of registers and input data and outputs scrambled data in units of bytes to the recording and/or reproducing apparatus," and that "generates the random data and adjusts a random data generation cycle of the random data based upon a data amount of two tracks in an outermost circumference of the optical disc." As such, it is respectfully requested that the Examiner reconsider and withdraw the rejection of claim 41.

Furthermore, Applicant respectfully asserts that the rejection of dependent claim 42 under 35 U.S.C. § 103(a) should be withdrawn at least because of its dependence from claim 41 and the reasons set forth above, and because the dependent claim includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 42 also distinguishes over the prior art.

Additionally, on page 5 of the Office Action, the Examiner admits that ECMA does not suggest the scrambling circuit of sections 16-18 adjusting a random generation cycle of the generated random data as recited in claim 43. In order to cure this deficiency, the Examiner takes Official Notice that basing a random generation cycle on an innermost circumference is well known in the art, and relies upon col. 6 of Matsui (U.S. Patent No. 5,661,707) to support the existence of such basing.

Moreover, the Examiner asserts on page 6 of the Office Action that it is inherent when recording data to begin recording at an innermost track.

From these elements taken individually from the prior art, the Examiner asserts, without support, that in order to "ensure successful scrambling between two tracks, it is necessary to take into account the size of the track," and that "it is possible that the track may not be successfully scrambled, but only partially scrambled" if the size of the track is not accounted for. However, it is respectfully submitted that the ECMA, which provides the standard for DVD

Read-Only discs, accounts for these track sizes by requiring that the data sizes and other physical constraints be pre-determined. Thus, even assuming arguendo the initial random data generation cycle is based upon the data sizes and track sizes as generally set forth in the Office Action, the Examiner relies upon no evidence in the prior art of why one skilled in the art would move beyond basing the random data generation cycle on these factors to requiring the data scrambler to perform an adjusting operation itself. There is further no suggestion in the sections 16-18 of ECMA, which detail the scrambling of the ECC blocks, that the ECMA data scrambler, which already accounts for data recorded according to the existing specification, needs to affirmatively adjust the random data generation cycle in a manner recited in claim 43.

Accordingly, it is respectfully requested that the Examiner support both the inherency arguments set forth in the Office Action that the ECMA necessarily discloses the recited features which the Examiner asserts are shown through Official Notice . Moreover, it is respectfully submitted that there is insufficient evidence of a motivation existing in the prior art to have the ECMA data scrambler adjust the random data generation cycle in a manner which meets claim 43. As such, it is respectfully submitted that there is insufficient evidence of record to support a *prima facie* obviousness rejection of claim 43.

As noted above, ECMA discloses a data scrambler along the lines of the prior art disclosed by Applicant in Fig. 2. As noted on page 4, lines 1-3 of the specification, the random data generator and the scrambler using the generator shown in Fig. 2 cannot respond properly when generation of random data having a cycle greater than 32Kb corresponding to scrambling are required. Thus the ECMA data scrambler is not envisioned to work with ECC sizes of 64KB and 2 KB for a sector or data frame, and is instead only suggested as being used with ECC sizes of 32 KB and 2 KB for a sector or data frame.

On page 7 of the Office Action, the Examiner acknowledges this deficiency, but merely asserts, without support, that one skilled in the art would have been motivated to modify the 32 KB ECC capability to handle the 64 KB ECC size "in order to scramble larger data tracks." The Examiner does not point to a suggestion in the prior art to make this particular modification, or why one skilled in the art would not further modify the generator to generate the random data using 64 KB instead of 32 KB. Moreover, there is no evidence of record that such a modification would lead to the result described by the Examiner, or that such would remain compatible with the standard set forth in ECMA. As such, it is respectfully submitted that there is insufficient evidence of record to maintain a *prima facie* obviousness rejection of claim 47, and it is respectfully requested that the Examiner reconsider and withdraw the rejection.

Similarly, since there is no suggestion that the data scrambler of the ECMA is usable with 64 KB ECC, Applicant respectfully asserts that the rejection of dependent claims 48 and 49 under 35 U.S.C. § 103(a) should be withdrawn at least because of its dependence from claim 47 and the reasons set forth above, and because the dependent claim includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 48 and 49 also distinguish over the prior art.

IV. CONCLUSION

In accordance with the foregoing, it is respectfully submitted that all outstanding rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 503333.

Respectfully submitted,

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